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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,930	04/01/2004	Charles H. Robinson	2003-010	2929

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EXAMINER
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HAYES, BRET C

ART UNIT	PAPER NUMBER
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3644

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/708,930

Applicant(s)

ROBINSON ET AL.

Examiner

Bret C. Hayes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply.

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 and 29-35 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 and 29-35 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>02 JUN 05</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 4 is objected to because of the following informalities: claims should begin on a separate line. Appropriate correction is required.

### ***Response to Arguments***

2. Applicant's arguments filed 02 JUN 05 have been fully considered but they are not persuasive.
3. In response to Applicant's argument against that the rejection under section 112, 2<sup>nd</sup> paragraph, regarding an omission of essential structural relationships, should be vacated on the grounds that Applicant has provided the reference regarding detonators and their size. Examiner does not understand how this is supposed to overcome a rejection regarding an omission of essential structural relationship. So detonators exist and they can be rather small. So what? The claims still fail to particularly point out and distinctly claim the subject matter which applicant regards as the invention, as previously cited. Therefore, the rejection stands.
4. Further, in an attempt to overcome the rejection cited above, Applicant's have amended the claims to recite for "transmitting a detonation from its input to its output including", which is purely functional language and merely directed to an intended use for the device. It cannot serve distinguish over the prior art and does nothing to positively define any structure identified as omitted in the previous rejection. Therefore, again, the rejection stands.

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5. In response to the Applicant's arguments, 37 CFR § 1.111(c) requires applicant to "clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections." (*Examiner's emphasis added.*)

In this case, applicant has failed to clearly point out patentable novelty and failed to show how the amendment avoids the combination of references applied against the claim. Instead, Applicant has argued that there is no factual basis for examiner's use of cited case law. While this may well be an arguable point, in light of the deficiency of the arguments in general as asserted above, it is also a moot point. Applicant *must* clearly point out the alleged patentable novelty over the prior art. There appears to be nothing in the arguments to indicate how the amended claims are so patentably novel.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

7. Claims 1 – 25 and 29 – 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claims 1 – 9, 18 – 24 and 29 – 34 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: a micro-electro-mechanical

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system (MEMS) based mechanical safe and arm assembly, as disclosed at page 2, paragraph 3 of the specification, and how the charges (input explosive column (or row), transfer charge and receptor charge) structurally relate to each other and the assembly. The MEMS-based mechanical safe and arm assembly is critical to the claimed invention as without this structure, the charges could be interpreted to be floating in space or lying about on a table. In other words, the claims only relate how the charges are disposed in relation to one another, and are silent with regard to structural limitations defining a connection to the MEMS-based mechanical safe and arm assembly as disclosed.

9. Any unspecified claim is rejected as being dependent upon a rejected base claim.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1 – 9, 18 – 24 and 29 – 34 are rejected under 35 U.S.C. 103(a) as unpatentable over US Patent No. 6,167,809 B1 to Robinson et al. (*Robinson*). In view of the rejection under 112, 2<sup>nd</sup> paragraph above, the metes and bounds of the claims cannot properly be determined. **As best understood, the claims are rejected as follows.**

12. Re – claim 1, Robinson discloses the claimed invention including, as set forth at col. 10, lines 43 – 54 (10:43-54), and 11:4-11, a fire train for a safe and arm device comprising out of position and/or out of alignment explosives wherein, in the safe position, the initiator is remote

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from the remaining explosives and wherein, in the armed position, the initiator is adjacent the remaining explosive charges.

13. Arguably, Robinson does not disclose the specific number and arrangement of the explosive charges. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use as many explosive charges as necessary, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. And, also, since in general detonators consist of an ignition charge, intermediate charge, and a base charge--each charge in the train being selected and used to transition from heat to shock.

14. Further, it would have been obvious to one having ordinary skill in the art at the time the invention was made to rearrange the explosive charges relative to the fire train, since it has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japiske*, 86 USPQ 70.

15. Re – claims 2 – 4, Robinson discloses the invention substantially as claimed except for the claimed total volumes. It would have been an obvious matter of design choice to select the total volumes as necessary, since such a modification would have involved a mere change in the size of a component. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

16. Re – claims 5 and 6, Robinson discloses the use of explosives and, as set forth above, detonation generally involves the use of three charges.

17. Re – claim 7, Robinson discloses the claimed invention except for the column comprising first, second and third charges. It would have been obvious to one having ordinary skill in the art

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at the time the invention was made to have the column comprise first, second and third charges, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8. In this case, duplicating explosive charges in an initiator would be considered mere duplication.

18. Re – claim 8, Robinson discloses the claimed invention except for the charges consisting of primary and secondary explosives. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the charges consist of primary and secondary explosives, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. In this case, selection of primary or secondary (sensitive or insensitive) explosives would be within the level of ordinary skill in the art.

19. Re – claim 9, Robinson discloses the claimed invention including an initiator chip (MEMS-based assembly) except for a spot charge and an output charge. See above with regard to duplication of essential working parts of an invention.

20. Re – claims 18 – 24 and 29 – 34, see above rejection of like claims.

#### ***Allowable Subject Matter***

21. Claims 10 – 17, 25 and 35 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

22. A statement regarding the reasons for indicating allowable subject matter has been included in the previous office action.

*Conclusion*

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication should be directed to Bret Hayes at telephone number (571) 272 – 6902. The examiner can normally be reached Monday through Friday from 5:30 am to 2:00 pm, Eastern Standard Time.

On July 15, 2005, the Central FAX Number was changed to **571-273-8300**. This new Central FAX Number is the result of relocating the Central FAX server to the Office's Alexandria, Virginia campus.

Most facsimile-transmitted patent application related correspondence is required to be sent to the Central FAX Number. To give customers time to adjust to the new Central FAX Number, faxes sent to the old number (703-872-9306) will be routed to the new number until



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September 15, 2005. After September 15, 2005, the old number will no longer be in service and **571-273-8300** will be the only facsimile number recognized for “centralized delivery”.

If attempts to contact the examiner by telephone are unsuccessful, the examiner’s supervisor, Teri Luu, can be reached at (571) 272 – 7045.

bh

18-Sep-05

A handwritten signature in black ink, appearing to read 'Teri Luu', with a stylized flourish at the end.

TERI PHAM LUU  
SUPERVISORY  
PRIMARY EXAMINER